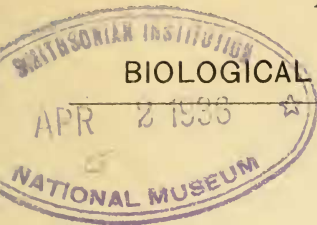


PROCEEDINGS

OF THE

BIOLOGICAL SOCIETY OF WASHINGTON



FIVE NEW PLANTS OF THE GENUS APLOPAPPUS.

BY S. F. BLAKE.

The new forms of *Aplopappus* here described have been found in the course of recent work on material of that genus in the United States National Herbarium and on specimens borrowed from the Dudley Herbarium of Stanford University.

Aplopappus wigginsii Blake, sp. nov.

Annuus parvus basi ramosus decumbens, ramis strigosis foliosis; folia parva inferiora pinnatisecta (lobis 3-5) petiolata cetera linearia integra apice albo-setosa strigosa vel laxius hirsuto-pilosa; capitula mediocria apice ramorum et ramulorum paucorum solitaria vix pedunculata radiata flava; involucri depresso-hemisphaerici 4-5-seriati gradati 4-5 mm. alti appressi phyllaria exteriora anguste linearia strigosa et parum glandulosa apice setosa medio herbacea margine anguste subscariosa, interiora subduplo latiora acuminata stipitato-glandulosa supra medium subherbacea; radii 12-15; achenia pilosa, ea disci anguste obovoidea compressa substipitata; pappus corolla disci quarta parte brevior; appendices ramorum styli anguste triangulari-subulatae lineis stigmatiferis subtriplo longiores.

Slender depressed annual, somewhat yellowish-green, without obvious main stem, several-branched within about 1 cm. of the base, the branches 3-9 cm. long, simple or few-branched, green or purplish; leaves alternate, the internodes 2-4 mm. long; lower leaves 8-13 mm. long, strigose or more loosely hirsute-pilose chiefly on the lower surface, the blades shorter than petiole, pinnately 3-5-parted, the lobes 2-4 mm. long, 0.5-1 mm. wide, each tipped with a white bristle 0.5-0.8 mm. long; other leaves linear, entire, sessile, 3-8 mm. long, 0.5-0.8 mm. wide, similarly pubescent, not setose-ciliate, tipped with a white seta 0.5 mm. long or less; heads solitary at tips of branches and branchlets, not obviously peduncled, 1.5-1.8 cm. wide (as pressed); disk (as pressed) 5-6 mm. high, 7-9 mm. thick; outer phyllaries linear, acute, 2.5-3 mm. long, 0.4-0.6 mm. wide, tipped with a bristle 0.3 mm. long or less, subherbaceous along midline with narrow subscarios margin or sometimes subherbaceous essentially throughout except for the subchartaceous whitish base, sometimes with small apical purplish spot, 1-vittate, the inner broader (0.8-1 mm. wide), often with

less developed bristle, whitish and subchartaceous about to middle, then subherbaceous and narrowly subscariosus-margined, 1-vittate, sometimes purplish toward tip, evenly but not densely stipitate-glandular; receptacle flattish, alveolate; rays 12-15, yellow, pistillate, sparsely puberulous on tube and base of lamina on back, the tube 1.5 mm. long, the lamina oval, 6 mm. long, 2.5 mm. wide, 3-denticulate, 4-nerved; disk flowers about 50, their corollas yellow, sparsely puberulous on teeth and sometimes toward base of throat, otherwise glabrous, 3 mm. long (tube 0.7 mm., throat funnelform, 1.8 mm., teeth triangular-ovate, 0.5 mm. long); ray achenes obovoid, plump, 1.6 mm. long, about 10-nerved, densely erect-pilose, their pappus similar to that of the disk but shorter (1.8 mm. long); disk achenes slenderly obovoid, 2-2.3 mm. long, 0.4-0.5 mm. wide, with substipitiform base, moderately densely erectish-pilose, distinctly compressed, 2-nerved, the sides rounded, nerveless, the pappus rather sparse, 2.5 mm. long, about $\frac{3}{4}$ the length of corolla, of yellowish-white graduated hispidulous bristles; style branches 1-1.2 mm. long, the stigmatic region oblong, 0.25-0.35 mm. long, the erect appendages nearly 3 times as long, narrowly triangular-subulate, 0.75-0.85 mm. long, rather sparsely and coarsely hispidulous.

BAJA CALIFORNIA: Gravelly slopes and margins of meadow at La Encantada, Sierra San Pedro Mártir, alt. about 2200 m. (7200 ft.), 18 Sept. 1930, I. L. Wiggins & D. Demaree 4914 (type no. 1,589,676, U. S. Nat. Herb.).

This little plant is a member of the group of annual species of the section *Blepharodon*, as the genus is arranged by Hall in his monograph, and is closely similar in general appearance to the depressed form of *A. gracilis* (Nutt.) A. Gray. In that species the leaves vary from pinnatisect or bipinnatisect (the lower) with more numerous lobes to deeply or shallowly toothed with several pairs of teeth tipped with relatively long white bristles, while the upper are sometimes subentire but with several pairs of marginal setae; the involucre is 5-6-seriate, more closely and regularly graduated, white-strigose or hirsute-pilose; the phyllaries are uniform and narrow, with conspicuous green or purple-green terminal spot and much better developed seta; and the pappus is nearly or quite as long as the disk corolla. From *A. gracilis*, as well as from all other species of its section except the otherwise very distinct *A. gymnocephalus* and *A. nuttallii*, *A. wigginsii* also differs in its very long style appendages, nearly or quite three times as long as the stigmatic region.

***Aplopappus scopulorum* var. *hirtellus* Blake, var. nov.**

Rami hornotini, pedunculi, et folia minute hirtella.

UTAH: Cedar Canyon, Iron Co., 2 Sept. 1931, A. O. Garrett 6051 (type no. 1,623,835, U. S. Nat. Herb.); Armstrong and White Canyons, near the Natural Bridges, San Juan Co., alt. 1600-1800 m., 4-6 Aug. 1911, P. A. Rydberg & A. O. Garrett 9543.

In the typical form of *Aplopappus scopulorum* (Jones) Blake the stem and leaves are perfectly smooth and glabrous, except for the spinulose-

ciliolate margin of the leaves; the peduncles are occasionally sparsely hispidulous.

***Aplopappus salicinus* Blake, sp. nov.**

Frutescens glaberrimus parum resinosis; rami tenuissimi pallide virides impresso-punctati; folia angustissime lineari-lanceolata falcata ca. 5 cm. longa 2 mm. lata plana 3-nervia non ciliolata impresso-punctata; capitula (immatura) pauca discoidea ca 11–12-flora minuscula pedicellata subcymosa; involucri ca. 4.5 mm. alti turbinati valde gradati ca. 6-seriati phyllaria e ovatis oblonga obtusa chartacea margine anguste scariosa; achenia (valde immatura) hirsuta.

Shrubby, the height unknown; branches simple or subsimple, subterete, about 1 mm. thick; internodes 1–2 cm. long; leaves 3.5–6 cm. long, 1.5–3 mm. wide, erect to deflexed, without axillary fascicles, attenuate, sessile and somewhat narrowed at base, entire, 3-nerved, firm, entirely glabrous, densely impressed-punctate on both sides; heads 3–7 (rarely subsolitary) at tips of stems and of the few peduncles from the upper axils, subcymose or sometimes subracemose, the peduncles very slender, naked or nearly so, 0.8–3.5 cm. long, the pedicels mostly 2–5 mm. long, naked or with a few small blunt bracts above; disk (immature) 5 mm. high, 3 mm. thick; involucre about 4.5 mm. high, strongly graduate, about 6-seriate, appressed, the phyllaries about 27, oblong-ovate to oblong, 0.8–1.2 mm. wide, very obtuse, with narrow subscarious margin, erose toward tip, glabrous, chartaceous and whitish, the outer (about 3 series) with somewhat thickened barely greenish tip bearing a rather obscure elliptical gland, the inner not thickened at tip, all with obscure costa; corollas (immature) apparently whitish, glabrous, 2.8 mm. long (tube 0.5 mm., throat 1 mm., teeth triangular-lanceolate, 1.3 mm. long); achenes (very immature) obovoid, erect-hirsute, 1 mm. long; pappus (immature) whitish, 2.8 mm. long, of graduated hispidulous bristles, the inner thickened toward apex; style branches with oblong acutish hispidulous appendages 0.8 mm. long, barely surpassing the stigmatic lines (these 0.7 mm. long).

ARIZONA: Bright Angel Trail, Grand Canyon, 22 Oct. 1905, *Alice Eastwood* 10 (type no. 619950, U. S. Nat. Herb.).

The type of this species is so similar in appearance to *Aplopappus scopulorum* (Jones) Blake that it is not surprising that it was listed under that species by the late Dr. H. M. Hall in his monograph of the genus. In that species, however, the leaves are hispidulous-ciliolate, and the impressed glands of the new species are lacking. The heads of Miss Eastwood's plant are unfortunately so immature that no critical comparison with those of *A. scopulorum* can be made. The deep lobes of the corolla are the same in both, and the styles are not clearly distinguishable. In a single head of *A. scopulorum* dissected (from Jones 6074) the phyllaries were decidedly more numerous (about 42).

***Aplopappus ferrisiae* Blake, sp. nov.**

Frutex parvus erecte ramosus foliosus resinosis glaber; folia anguste oblanceolata acuta v. obtusa sessilia integra plana 8–15 mm. longa 1.2–2.8

mm. lata crassa utrinque subbullata et impresso-punctata pallide viridia; capitula parva discoidea 5-6-flora subcylindrica ca. 7 mm. alta in axillis superioribus 1-3-nata subsessilia, inflorescentiam angustam foliaceam efficientia; involucri 6-7 mm. alti valde gradati ca. 6-seriati phyllaria ca. 18 chartacea margine anguste subscariosa albescentia acuta v. acuminata breviter mucronata, extima oblongo-lanceolata media anguste oblonga intima linearia; corollae ut videtur pallide flavae anguste infundibuliformi-cylindricae, dentibus ovatis brevibus; achenia submatura obovoidea 5-nervia subdense erecto-hirsuta; styli ramorum appendices anguste triangulares acuminatae lineis stigmatiferis paullo longiores.

Several-stemmed shrub, 1-2 dm. high and perhaps more, erect or erectish, glabrous and more or less resinous throughout, the branches brownish-white; leaves alternate, erectish, without or with only small and inconspicuous axillary fascicles, the internodes mostly 1-5 mm. long; blades often mucronulate, 1-nerved, the veinlets on both sides reticulate and impressed and freely dotted with inconspicuous impressed glands; heads in 1's and 3's in the upper axils, sessile or on peduncles 3 mm. long or less, forming a virgate inflorescence 1-2 cm. long, bracted by small leaves mostly shorter than the heads; outermost phyllaries about 2 mm. long, 0.8 mm. wide, the inmost about 7 mm. long, 0.6-0.8 mm. wide, the mucro 0.1-0.3 mm. long, subulate, sometimes inflexed, all the phyllaries serrulate toward apex, and there with a narrow lance-linear brownish area surrounding the single narrowly linear not conspicuous glandular vitta, this about 1/3 the length of the phyllary and often somewhat carinate; corollas (not completely mature) 4.8-5.2 mm. long, glabrous (tube about 1 mm. long, throat slightly dilated upwardly from near the middle, about 3.5 mm. long, teeth triangular-ovate, 0.6-0.8 mm. long); achenes plumply obovoid, 1.2-1.4 mm. long, 0.7 mm. thick; pappus brownish-white, graduated, 4 mm. long, the bristles hispidulous, the outermost only 1.2 mm. long; stigmatic lines 0.7 mm. long, the appendages 0.9-1 mm. long.

BAJA CALIFORNIA: In playa south of San Vicente, 13 August 1930, *W. S. Cooper* 75 (type in Dudley Herb., no. 215690; photog. and fragments, U. S. Nat. Herb.); one of predominant shrubs just beyond Johnston's Ranch on road to Hamilton Ranch, Santo Domingo, in coastal plain, 1 Mar. 1934, *Roxana S. Ferris* 8516.

As the genus is arranged in Hall's recent monograph, this species enters the section *Ericameria* and ranges with *Aplopappus propinquus* Blake and *A. sonoriensis* (A. Gray) Blake in Hall's key. It differs widely from these species in inflorescence, foliage, and characters of head and involucre. In its virgate although very much shorter inflorescence it resembles *A. orcuttii* A. Gray, and its leaves are very similar in every way to the reduced upper ones of that species. The involucre in *A. orcuttii*, however, is composed of much more numerous, more closely graduated, blunt or bluntish phyllaries. From all of the *A. venetus* group, which it much resembles in the character of the foliage, it differs fundamentally in the character of the phyllaries and in the comparatively long style-appendages. The phyllaries in *A. ferrisiae* are extremely deciduous, but this may be due to the somewhat immature state in which the type was collected.

The collection made by Mrs. Ferris is old and weathered, but shows a somewhat similar condition.

***Aplopappus martirensis* (Wiggins) Blake.**

Ericameria martirensis Wiggins, Contr. Dudley Herb. 1: 177. pl. 17, f. 2. 1933.

As stated by Prof. Wiggins, the nearest relationship of this species of northern Baja California is with *A. sonoriensis* (A. Gray) Blake (*Ericameria diffusa* Benth.) and *A. propinquus* Blake (*E. brachylepis* (A. Gray) Hall), although its inflorescence is more regularly cymose than in either of those species. It is known only from the type collection, Wiggins & Demaree 4893, from La Encantada, Sierra San Pedro Mártir, altitude 2200 meters, which has been sent me for examination through the kindness of Mrs. R. S. Ferris.

***Aplopappus lehmannii* var. *subcalvus* Blake, var. nov. .**

Folia maturitate subtus viridia subdense sessili-glandulosa et non dense villosa pilis laxis plusminusve intricatis.

COLOMBIA: "Shrub 8-10 ft., corolla orange-yellow," in woods, western slope of Páramo Rico, Eastern Cordillera, Dept. Santander, alt. 3300-3600 m., 15-19 Jan. 1927, E. P. Killip & A. C. Smith 17816 (type no. 1,353,341, U. S. Nat. Herb.).

This plant is described with some hesitation as a variety of *Aplopappus lehmannii* (Hieron.) Blake. It differs rather conspicuously from the specimens of that species examined in the green, rather densely glandular and only sparsely pilose lower surface of the leaves, those of *A. lehmannii* being densely grayish or ochroleucous-tomentose beneath. The leaves are also more long-tapering at base in var. *subcalvus*, tending in fact to narrowly obovate, but this difference may be only individual. The type of this variety has been mentioned by Hall¹ as possibly only a form of *A. caucanus*, but his description of the leaves as "only puberulous" beneath is incorrect. Its persistently tomentulose stem and more or less tomentulose outermost phyllaries, however, ally it rather with *A. lehmannii*. The young leaves are rather densely and loosely ochroleucous-tomentose beneath, this feature also indicating a connection with *A. lehmannii* rather than *A. caucanus*.

¹The genus *Haplopappus*, 359. 1928.